

ABSTRACT OF THE DISCLOSURE

The present invention provides a data processing apparatus and method for performing an adaptive filter operation on an input data sample to generate an output data sample. In accordance with an adaptive filter operation, a logical computation is performed on a logical data item to determine whether a filtering computation should be applied to the input data sample. In accordance with the present invention the method comprises the steps of: (a) transforming the logical computation into an equivalent logical computation that incorporates the filtering computation; (b) storing the input data sample and the logical data item within a data word; (c) employing a data processing unit to apply the filtering computation to the data word, resulting in the data word containing a filtered data sample and a modified logical data item; (d) comparing the modified logical data item with predetermined criteria; and (e) outputting as the output data sample either the input data sample or a data sample derived from the filtered data sample, dependent on the comparison at said step (d). The present invention hence enables aspects of the logical computation to be performed simultaneously with the application of the filtering computation, and for the logical and filtering computations for a plurality of data samples to be performed simultaneously, which significantly improves the efficiency of the adaptive filter operation.